



Team and Individual Strength use as predictors of Athlete Engagement: The moderation effect of gender

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COMMENTS

The reader is reminded of the following:

The editorial style as well as the references used in this mini-dissertation follows the format as prescribed by the Publication Manual (6th edition) of the American Psychological Association (APA). This practice is in line with the policy of the Programme in Industrial Psychology of North-West University (Vaal Triangle Campus) to use APA style in all scientific documents as from January 1999.

The mini-dissertation is submitted in the form of a research article. The editorial style specified by the South African Journal of Industrial Psychology (which agrees largely with the APA style) is used, but the APA guidelines were followed in constructing the tables.

DECLARATION

I, Lisa Alonzo, hereby declare that **Team and individual strength use as predictors of athlete engagement: The moderation effect of gender** is my own work and that the views and opinions expressed in this work are mine and those of relevant literature references as indicated in the references.

Furthermore, I declare that the contents of this research study will not be submitted for any other qualification at any other tertiary institution.

LISA ALONZO

November 2018

DECLARATION FROM THE LANGUAGE EDITOR



20 November 2018

I, **Ms Cecilia van der Walt**, hereby declare that I took care of the editing of the mini-dissertation of **Ms Lisa Alonzo** titled ***Team and Individual Strength Use as Predictors of Athlete Engagement: The Indirect Effect of Gender.***

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SUMMARY

Title: Team and individual strength use as predictors of athlete engagement: The moderation effect of gender

Key terms: Strength-based approach, athlete engagement, job demands-resources model, conservation of resources theory, gender difference.

Athlete engagement is a cognitive-affective experience that increases athlete flow and decreases burnout. It is feasible that team and individual strengths be deemed valuable resources that could be harnessed to ensure optimum athlete engagement. In understanding the predictors of athlete engagement, team- and individual athlete interventions and coaching practices could be enhanced to achieve optimal performance and athlete success. While research on athlete engagement has increased in recent years, research focusing on strength use and gender differences in athlete engagement is minimal. Research that has found differences in the way males and females utilise different resources to perform could be valuable in determining better coaching interventions in sport, as well as how a team environment could be designed to enhance athletic engagement.

The aim of this study was to investigate team- and individual strength use as predictors of athlete engagement. It furthermore examined the influence of gender on the relationship between team strength use and athlete engagement as well as the influence of gender on the relationship between individual strength use and athlete engagement. This study followed a quantitative, cross-sectional approach. A target sample population ($n = 235$) was utilized to highlight the prevalence of relationships and associations at a given time. Confirmatory factor analysis was used to obtain factor scores. PROCESS in SPSS evaluated moderation.

Statistical analysis highlighted a low athlete engagement when team strength use is low. In a study performed by Stander et al. (2017) it was indicated that individual strength use strongly correlated with athlete engagement. The lowered athlete engagement with low team strength use and increase in athlete engagement with individual strength use indicates a plausible correlation between strength use and athlete engagement.

The findings from the research could assist coaches in understanding the importance of team strength use when working with female athletes. Team climate and team relationships could be a focal point for team strength use in an athlete's environment. The Job Demands-Resources Model (JD-R Model) and Conservation of Resources (COR) Model in sport psychology can be influential when applying the understanding of gender differences in obtaining favourable outcomes.

Research limitations and recommendations are made to assist future research.

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CHAPTER 1

INTRODUCTION

This mini-dissertation investigates team- and individual strength use as predictors of athlete engagement, with a moderation effect of gender. There is a specific focus on whether team- and individual strengths use influence athlete engagement.

This chapter highlights the problem statement and provides an overview of previous research that has investigated individual and team strength use, athlete engagement, and gender differences in sport psychology. Within this chapter, research questions, objectives and the methodology utilised will be explained.

1. PROBLEM STATEMENT

Research investigating sport psychology has predominantly focused on athlete flow (Hodge, Lonsdale, & Jackson, 2007), peak athletic performance (Colbert, Scott, Dale, & Brennan, 2012), resilience (Pidgeon, Ford, & Klaassen, 2014), and motivation (Treasure, Lemyre, Kuczka, Standage, Hagger, & Chatzisarantis, 2007). Increased research in determining methods that can sustain or promote confidence, dedication, vigour and enthusiasm would be valuable in reducing potential burnout in athletes (Lonsdale, Hodge, & Raedeke, 2007b; Schaufeli & Salanova, 2007) as well as increasing positive outcomes (Noble & McGrath, 2015; Noble, Perkins, & Fatout, 2000) and optimisation of athlete potential (Kaiser & White, 2009). Interventions including a strengths-based approach has been found to increase athlete engagement (Stander et al., 2017), where further investigation into demographic influences on strengths use could further enhance the design and methodology of such interventions.

Traditionally, people performance and development approaches highlighted the deficits and inadequacies in people (Buckingham & Clifton, 2001). Development plans were designed and implemented in an attempt to resolve these highlighted deficits as part of what is known as the deficit-based approach (Linley & Harrington, 2006). Within the last decade, however, potential and strengths have been the focus of development approaches as part of a focus to optimise human performance (Seligman & Csikszentmihalyi, 2000; Wood, Linley, Maltby, Kashdan, & Hurling, 2011). The strengths-based approach, which is associated with positive psychology, emphasizes the need to accentuate the strengths and virtues of individuals and teams alike (Cravens, Oliver, & Stewart, 2010; Linley, Joseph, Harrington, & Wood, 2006; Stander et al., 2017; Stander & Mostert, 2013). This is done to amplify the human experience and ensure full development of potential (Buckingham & Clifton, 2001; Clifton & Harter, 2003; Linley & Harrington, 2006).

The strength-based approach has been well-researched in the work domain, where it has been found to relate positively to engagement (Stander & Mostert, 2013; van Woerkom, Oerlemans, & Bakker, 2015), productivity (Stander, Mostert, & de Beer, 2014), and lower turnover rates (Stander, Rothmann, & Botha, 2017). The Corporate Leadership Council (2002) found that performance was increased by 36.4% when strengths were highlighted during performance reviews. Research further highlights the increased effectiveness of managers that have completed a strengths intervention, where higher levels of productivity were evident in their teams (Asplund, Lopez, Hodges, & Harter, 2009). Further, research conducted by Linley and Harrington (2006) found a direct correlation between work engagement and organisational strength use. It can then be deduced that an emphasis on strength use within an athlete environment can increase athlete engagement (Linley & Harrington, 2006; Stander, De Beer, Stander, Mostert, & Coxen, 2017).

Kaiser and White (2009) indicate the importance of a strength-based approach in creating a platform for athletes to utilise their resources (Stander et al., 2014) and generate optimal results. The athlete environment enables social support for the utilisation of strengths (Blau, 1964), supporting the importance of the Conservation of Resources theory (Hobfoll, 1989) in athlete engagement.

According to the conservation of resources theory, individuals actively seek resources in their direct environment that permit them to be more efficient and achieve goals (Hobfoll, 1989). Individuals further strive to protect and retain these resources (Tenenbaum & Eklund, 2007). The Conservation of Resources model delineates the psychological stress experienced in a reaction to a lack of resource gain, or a loss of resources in a specific environment/context (Alvaro et al., 2010; Hobfoll, 1989, 2001; Tenenbaum & Eklund, 2007). Athletes can actively seek resources that promote engagement and strengths, where it may be possible to gain these resources from their environment (Peifer et al., 2014). When resources are available to athletes, they are more likely to attain favourable outcomes, since the environment is enabling (Flores, Salguero, & Marquez, 2008; Park, Peterson, & Seligman, 2004; Pummell, Harwood, & Lavalley, 2008; Seligman, 2011; Stander & Mostert, 2013; Stander et al., 2015; Stenseng, Forest, & Curran, 2015). For example, retired basketball player, Dennis Rodman, suggested that ‘thinking creatively and focusing on areas of strength’ was the method he applied to rebound in gameplay (Jackson & Csikszentmihalyi, 1999, p.42). This aligns with what Jackson and Csikszentmihalyi (1999) identified as a ‘mental opportunity for action’ when facing sport challenges. Bakker and Demerouti (2008; 2011) identified strength use as ‘an asset available in the direct environment of the individual’.

Despite the productive flow of research associating the strength-based approach with positive outcomes in the occupational domain, little research exists that explores the approach in the context of an athletic environment including the influence of gender on this relationship. Furthermore, research that delineates the effect of strength-based approaches in the attainment of favourable athlete outcomes is limited. This is true of both individual and team-strength use. Research does, however, highlight the role of positive environments in creating favourable outcomes. For example, Young (2012) indicates that communication between coach and Olympic medallists creates an environment which allows for optimal athlete performance. Research further indicates that a team environment with supporting relationships allows an athlete to perform with conviction and confidence (Moreno, Cervelló, & Cutre, 2010; Young, 2012). Optimal athlete performance and performing with conviction and confidence identifies with athlete engagement (Hodge et al., 2009; Lonsdale, Hodge, & Jackson, 2007a).

Athlete engagement is a vital element in athlete success as it increases an athlete's inclination towards investing in their performance and sustaining positive cognitions on their sporting experience (Lonsdale et al., 2007a). Athlete engagement comprises four main factors, which are: confidence, dedication, enthusiasm and vigour (Lonsdale et al., 2007a). With the development of confidence through a positive team environment (Moreno et al., 2010; Young, 2012) it is plausible that team-strength use will predict athlete engagement. Research suggests that team-strength use will harness individual strength use through a team culture that encourages the use of character strengths (Lonsdale et al., 2007b; Stander et al., 2017).

Individual strengths use refers to the ability an individual has in building resilience (Frese & Fay, 2001) and using their strengths to achieve optimal performance (Stander, Mostert & de Beer, 2014). In line with the job demands resource (JD-R) model, individual strengths use is described as a resource (Stander & Mostert, 2013) as it is a property that increases the possibility of a goal being obtained (Demerouti & Bakker, 2011). The same is true for team strength use which refers to the environment that a team or organisation creates that enables an individuals' strengths (van Woerkom et al., 2015). The JD-R model is a theoretical model which postulates that every work role has resources and stressors that contribute towards work-related stress, as well as positive outcomes (Bakker & Demerouti, 2007; Bakker et al., 2003b). The JD-R model further explains how resources lead to positive outcomes (Bakker & Demerouti, 2007; Hakanen et al., 2008), which includes personal resources (Hobfoll, Johnson, Ennis, & Jackson, 2003) together with work engagement, motivation (Hakanen et al., 2008) and the creation of a conducive environment (Stander, 2015; van den Heuvel et al., 2010).

An environment created by a team should enable an athlete's character strengths to be used as valuable resources in ensuring optimal performance (Seligman & Csikszentmihalyi, 2000; Stander et al., 2011). Physical, social, and organisational resources further assist in alleviating psychological or physiological strain that may prevent goal attainment or growth (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009).

The environment in team strength use is described in terms of the culture, policies, and team dynamics that allow the individual to fully express their strengths (Stander & Mostert, 2013). These individual and team resources within an athletic environment have been found to increase positive emotions that lead to an engaged state (Frederickson, 2002), increase team cohesion (Pummel et al., 2008) and increase goal attainment (Bakker & Demerouti, 2008; Demerouti & Bakker, 2011). While evidence exists that suggests individual strength use yields more positive outcomes to that of team strength use (Stander & Mostert, 2013; Stander et al., 2014), this research did not investigate demographical variables such as gender differences in strength use. It is notable that sport psychology research has rarely considered gender differences, a demographic variable, within team- and individual strength use (Evdoxia, Miltiadis, & Evgenia, 2013; Stander et al., 2017).

By understanding these demographical differences, coaching dynamics and strategies could be modified to be more beneficial to athlete enhancement (Valbuena, 2015). Furthermore, gender-specific strength use training could add value to the development of positive sport experiences and burnout prevention strategies (Lonsdale, Hodge, & Raedeke, 2007; Raedeke & Smith, 2004; Schaufeli & Salanova, 2007; Valbuena, 2015). With the rising concern for mental health and performance within an athletic environment (Junge & Feddermann-Demont, 2016; Weber et al., 2018), gender research in athletes could highlight possible risk factors associated with poor athlete engagement as a result of depression or a lowered self-worth. In addition to this, gender research could highlight the risk factors or prevalence of depression and burnout in elite athletes during and post-career (Junge & Feddermann-Demont, 2016; Martinez-Alvarado, Guillén García, & Feltz et al., 2016). Gender research within the sport psychology field tends to differentiate the male versus female demands or resources, without determining interventions that could increase resources and improve athlete engagement, which is in line with the more traditional deficit-based approach.

A study investigating gender differences in risk factors found that a construct of athlete engagement (confidence) was influenced by a females level of self-worth (Evdoxia et al., (2013).

This finding provides a plausible indication that gender differences can influence athlete engagement. Stander (2015) and Gee (2010) highlighted that positive results can be achieved through applying psychology in sport to create an environment in which potential can be transformed, which includes confidence (Neil, Mellalieu, & Hanton, 2008). This is supported by social exchange theory that suggests that people believe that their development should be optimised within the environment they operate. Furthermore, an athlete environment has been found to be developmentally significant as a result of increased opportunities for socialization (Evdoxia et al., 2013).

A study conducted by Martins et al. (2015) found a statistically significant difference between females and males regarding the *confidence* and *vigour* components of engagement. This difference highlighted that males felt more confident and energetic in their sport compared to females, however, Martins et al. (2015) indicated that this finding did not result in a difference in engagement levels between males and females. However, this could be as a result of female athletes being underrepresented in studies involving athletes (Deaner, Balish, & Lombardo, 2016) and therefore being statistically insignificant with selective research. Research on gender differences in sports conducted by Deaner et al. (2016) provides evidence that suggests that males show more motivation in sport, particularly with greater competitiveness and risk taking. For example, a study conducted by Warner and Dixon (2013) found women to deem internal competition as a factor that detracted them from their sporting experience, therefore being a demand to women in their athlete environment.

Females on the other hand display a lower likelihood of tolerating same-sex peers whereas males show a lesser likelihood of excluding them (Benenson, 2013), possibly resulting in differences in both individual and team strength use and ways in which various engagement constructs can be developed. Further, a study conducted on elite female players indicated that female athletes displayed better mental health once their careers had passed (Gustafsson, Hassmen, Kentta, & Johansson, 2008).

While research highlights the differences between genders in terms of how one gender may display a higher or lower preference towards specific constructs, limited research has been conducted on how these differences influence athlete engagement and how a strength-based approach could be developed around these gender differences. In addition, most sport psychology researchers underrepresents females within their studies (Burton, 2015).

While investigating gender as a mediating factor for athlete engagement, data analysis indicated a direct link between individual strength use and athlete engagement (Stander et al., 2007). This link could be as a result of increased individual resources that enable athletes to use their strengths in enhancing peak performance (Kaiser & White, 2009). Lonsdale et al. (2007) further indicate that athletes who promote their strengths are more probable to engage in their sport, resulting in positive emotions and thought actions that result in engagement (Frederickson, 2002) – indicative of the effectiveness of the JD-R Model and the value of strength use development as a valuable resource (Stander & Mostert, 2013).

2. LITERATURE REVIEW

In order to aid in the conceptualization of the study, a preliminary theoretical overview of the various components of the planned study is presented below.

2.1 Strength use

The strength-based approach (SBA) is a development approach that enables individuals to utilize their unique potentials and character strengths in order to attain positive outcomes (Seligman & Csikszentmihalyi, 2000; Wood et al., 2011). It was identified by Buckingham and Clifton (2001) and forms part of the positive psychology paradigm (Stander et al., 2017).

Strength-based approach may be defined as an approach that highlights the development of an individual towards achieving optimal performance and reaching their performance goals (Buckingham & Clifton, 2001). Utilizing strengths often aids in goal attainment and increased energy that is needed for challenging tasks (Wood et al., 2011). Previous methods used in the development of people involved a deficit-based approach in which deficiencies were the focus of development (Noble et al., 2000).

The positive psychology paradigm has indicated that focusing on strengths is equally imperative for development (Linley et al., 2006) as is a focus on remedying deficits in order to increase optimal performance (Kaiser & White, 2009; Seligman & Csikszentmihalyi, 2000; Wood et al., 2011).

Team strength use and individual strength use are both components of SBA (Botha & Mostert, 2014; Stander & Mostert, 2013) that focus on achieving optimal performance. Team strength use refers to the environment created by a team or organisation that enables an individuals' strengths (van Woerkom et al., 2015). The environment in team strength use is described in terms of the culture, policies, and team dynamics that allow the individual to fully express their strengths (Standar & Mostert, 2013). For example, a team strength that has been found to be effective for male athletes includes social support and autocratic behaviour (Beam et al., 2004). Team strength use is considered to be a vital resource that increases the possibility of goal attainment (Bakker & Demerouti, 2008; Demerouti & Bakker, 2011) and engagement (Frederickson, 2002). Furthermore, research highlights that team strength use increases team cohesion (Pummel et al., 2008) and reduces environment stressors (Standar, 2017).

Individual strengths use refers to the ability of an individual to utilize their strengths in achieving optimum performance (Standar, Mostert & de Beer, 2014) and building resilience (Frese & Fay, 2001, Hobfoll et al., 2003) which is evident in sports teams that have implemented strength-based group-coaching (Gordon & Gucciardi, 2011).

Self-efficacy and resilience are imperative resources according to the JD-R model, as resources are invaluable when seeking positive outcomes from an employee.

Athlete Engagement

Athlete engagement consists of four main factors, which include confidence, dedication, enthusiasm and vigour (Lonsdale et al., 2007). Athlete engagement can be characterized through the positive cognitions that reflects a long-lasting experience when practicing an activity (Lonsdale et al., 2007). Athlete engagement within the sport context may be defined as a positive cognitive-affective experience (Lonsdale et al., 2007). According to athlete engagement theory, confidence refers to an athlete's belief in their ability to achieve their goals and experience high performance (Lonsdale et al., 2007). The will to invest effort and time into achieving goals is the dedication aspect of athlete engagement, where vigour refers to physical and mental liveliness, and enthusiasm as high levels of enjoyment (Lonsdale et al., 2007). Total athlete engagement results in outcomes such as higher flow or persistence (Hodge et al., 2009), self-regulation (Martin & Malone, 2013), and decreased burnout (DeFreese & Smith, 2013). Research further indicates that high-quality motivation leads to increased engagement (Schaufeli et al., 2002).

To fully understand the concept *athlete engagement*, the potential antecedents and consequences of athlete engagement is imperative. In a study conducted by Hodge et al. (2009) it was found that autonomy, competence, and relatedness form basic psychological needs that should be satisfied as a motivator for athlete engagement. These factors increase an individual's ability to experience well-being (Hodge et al., 2009). Autonomy refers to self-directedness, where competence, an individual strength and resource, provides an indication of how effective an athlete is (Hodge et al., 2009), while relatedness, a team strength and resource, highlights an athlete's connectedness with others. Further research by Hodge et al. (2009) indicates that the link between athlete engagement and flow includes positive feelings and thoughts.

Flow, an intrinsic reward and state-like experience (Csikszentmihalyi, 1990), was identified as a psychological consequence of athlete engagement (Hodge et al., 2009). A negative psychological consequence of not having our basic needs met often result in burnout or anxiety (Hodge et al., 2009).

2.2 Job demands – resources model (JD-R Model)

The Job Demands – Resource (JD-R) model emphasizes that risk factors associated with job-related stress are unique to different occupations (Bakker & Demerouti, 2007; Bakker et al., 2003a; Bakker et al., 2003b; Demerouti et al., 2001). These factors are referred to as job demands and job resources which form a model that can be applied to various occupational settings. Job demands refers to physical, psychological, social, or organisational components of a job that require cognitive and emotional skills associated with physiological or psychological costs (Bakker & Demerouti, 2007; Bakker et al., 2003a; Bakker et al., 2003b; Demerouti et al., 2001). Job resources refers to physical, psychological, social, or organisational components of a job that reduce job demands, assist in achieving work goals, and stimulate growth, learning and development (Bakker & Demerouti, 2007; Bakker et al., 2003a; Bakker et al., 2003b; Demerouti et al., 2001).

Bakker and Demerouti (2007) emphasised that the JD-R model not only highlights the negative effect of job demands, but also the positive impact resources have on engagement as well as on motivational processes (Schaufeli & Bakker, 2004). Strength use may be considered a personal resource as it reduces high emotional demands and increases self-esteem (Cohen & Wills, 1985). Strength use support may be encouraged by allowing task engagement that is aligned with individual strength, which could involve two or more colleagues with similar strengths (van Woerkom & Meyers, 2015) to enhance team effectiveness.

The JD-R Model has been researched within the sport domain where Bruner, Munroe-Chandler, and Spink (2008) found elite athletes, who had received overly critical feedback, reported a decrease in their confidence. In addition to this, research highlights the advantage of teammates as a resource among horse riders (Pummel et al., 2008). While this research highlights the resources or demands found within a sports context, research investigating the JD-R model within a sporting context is limited (Stander, 2017). The JD-R model highlights the resources and demands an athlete faces on both an individual and team strengths approach, specifically with character strengths and contextual influences (Bakker et al., 2003; Bakker & Demerouti, 2007; Stander & Mostert, 2013).

Applying a strengths-based approach is considered to be correlated to positive leadership which has a positive relationship to engagement and involvement (Arakawa & Greenberg, 2007). Active strength promotion and the creation of a strength-use culture within a team by leaders can lead to higher performance (Elbe et al., 2010), indicating that a coach who possesses positive leadership skills may be a resource-related variable which contributes to engagement. Moreover, indications are that a culture of strength use may lead to increased performance and athlete engagement (Stander, 2013). In exploring team- and individual strength use as predictors of athlete engagement, with a moderation effect of gender, the role of leadership in promoting strength use could be pivotal. With female athletic programs being predominantly coached by male leaders at college level (Blackshear, 2016), leaders could possibly need to understand whether females require an individual strengths-based approach or team strengths-based approach in order to achieve performance.

2.3 Conservation of resource model

Conservation of resource (COR) model indicates that individuals tend to gather or maintain resources such as work support, work autonomy and work-related development processes (Hobfoll, 1989, 2001).

Hobfoll (2001) emphasized that resource drain could be reduced by having more resources that enabled problem solving. The COR model indicates a positive relationship between resources of social support and individual confidence, which contributes to personal characteristic resources (Baral & Bhargava, 2011). When individuals are challenged by a demanding environment, they will continuously seek resources that will allow them to perform at an optimal level or experience athlete flow (Alvaro et al., 2010).

In this study, team strength use, and individual strength use will be explored as job resources that will enhance and strengthen the availability of current resources (Halbesleben et al., 2014). Furthermore, since research on the impact of gender on team- and individual strength use and athlete engagement is lacking, COR theory will be used as the theoretical foundation for investigating these factors in a South African context. Highlighting the behavioural differences between male and female, Beam et al. (2004) differentiated male and female leadership preferences, where female athletes indicated a preference for training that was situational and related to instruction behaviours, indicating a resource that needs to be maintained, while male athletes indicated a preference for social support and autocratic behaviour (Beam et al., 2004) that may need to be gained or maintained in order to perform.

The following research questions emerged from the literature and research problem:

- How is the strength-based approach and athlete engagement conceptualised in the literature?
- What is the relationship between a strength-based approach and athlete engagement?
- Does team strength use predict athlete engagement?
- Does individual strength use predict athlete engagement?
- Does gender have an influence on the relationship between strength use and athlete engagement?

3. RESEARCH OBJECTIVES

Research objectives are divided into a general objective and specific objectives.

3.1 General Objective

The general objective of this research is to investigate team- and individual strength use as predictors of athlete engagement as well as the moderation effect of gender.

3.2 Specific Objectives

The specific objectives of the research include to:

- Determine through a literature review how the strength-based approach and athlete engagement are conceptualised.
- Determine the relationship between strength-based approach and athlete engagement.
- Investigate the role of team-strength use in predicting athlete engagement.
- Investigate the role of individual strength use in predicting engagement.
- Investigate the effect of gender on the relationship between individual strength use and athlete engagement.

4. RESEARCH METHOD

4.1 Phase 1: Literature review

The literature review focuses on synthesizing previous evidence-based research findings that are based on research questions posed (Salkind, 2009). The systematic literature review will focus on analysing prior research pertaining to gender, individual and team strength use, and athlete engagement.

Relevant resources will be consulted to establish whether predictions and relationships exist between these variables. The Job Demands-Resource Model and Conservation of Resources Model will be used as the theoretical models.

The literature review will consist of books, theses and dissertations, and peer-reviewed publications. Inclusion criteria will include articles on gender differences, individual and team strength use, and athlete engagement where articles will be consulted. Books, theses and dissertations, and peer-reviewed publications that do not relate to gender, individual and team strength use, and athlete engagement will be excluded.

Research will be obtained from various databases that are not limited to, but include: *Google Scholar*, *Google Books*, *Science Direct*, *SA ePublications*, *EBSCOHOST*, *WorldCat Discovery*, and *Africa-Wide Information*.

The terms that will be included in the search are: gender, gender differences, female, male, individual and team strength use, athlete engagement, Job-Demands Resource Model, Conservation of Resources Model. Publications dated between 2008 and 2018 will be included. A wider date range will be utilized for theories in order to include original work.

Research results will further be obtained from various journals that include: *South African Journal of Industrial psychology, Journal of research in Personality, Academy of Management Journal, Journal of Occupational and Organizational Psychology, Journal of Management, Journal of Industrial Psychology, Journal of Organizational Psychology, Human Resource Management Journal, Harvard Business review and the Journal of Business and Psychology.*

4.2 Phase 2: Secondary Data

The secondary data phase will highlight the research design, the participants, the measuring battery, the statistical analysis and the ethical considerations of the study. Secondary data will not be supplemented by further fieldwork.

4.2.1 Research design

The research included secondary data analysis where the pre-existing data originated from an internal research project within North-West University. The original data was collected with the purpose of evaluating the role the strength-based approach has in creating athlete flow experience. Further, the data was collected to explore how the relationship between the strength-based approach and flow experience may be affected through athlete engagement. For purposes of this study, selected quantitative data collected was analysed so as to explore team- and individual strength use as predictors of athlete engagement.

4.2.2 Participants

The participants used for the original data gathering process were student athletes who were still completing academic studies when participating in the research.

Participants included 173 (73.6%) males and 62 (26.4%) females, of which 167 (71.1%) were male and female football players and 68 (28.9%) were rugby players, both male and female. Of the entire sample, 163 (69.4%) of participants represented their university teams, 46 (19.6%) represented provincial teams, and 21 (8.9%) represented their national teams.

Participants adhered to the following inclusive criteria for the study:

- Were required, at the time of the research, to receive a form of compensation for their participation in sport (for example through a bursary, small salary or allowance).
- Were required, at the time of the research, to be actively involved in sport participation in conjunction with another significant time-consuming activity, such as part-time work or study.

These criteria ensured that only serious student athletes, who all had the prospect of developing into full-time athletes in the future, were included in this study. All participants signed a consent form which stated that data would be made available to researchers actively involved in the study project.

4.2.3 Measuring instruments

4.2.3.1 Biographical questionnaire

A biographical questionnaire was used to gather information on the demographic characteristics of participants (for example; age, gender, qualification and home language).

4.2.3.2 Strength Use and Deficit Improvement Questionnaire (SUDIQ)

The SUDIQ (van Woerkom et al., 2016) was used to measure dimensions of the strength-based approach through team strength use and individual strength use. The SUDIQ comprises 43 items, which are scored on a seven-point frequency scale that ranges from 0 (almost never) to 6 (almost always).

An example of items used includes: ‘My sports team allows me to use my talents’ (team strength use) and ‘In my sport, I make the most of my strong points’ (individual strength use) Cronbach alpha values of 0.94 for team strength use and 0.93 for individual strength use was established for internal consistency (Stander et al., 2014). Various studies deem the SUDIQ a reliable tool (Botha & Mostert, 2014; Stander & Mostert, 2013; Stander et al., 2014).

4.2.3.3 Athlete Engagement Questionnaire (AEQ)

The AEQ, developed by Lonsdale, Hodge, and Jackson (2007) consists of 16 items that are rated on a five-point Likert scale ranging from 1 (almost never) to 5 (almost always).

The items are based on four subscales, namely; confidence ('I feel capable of success in my sport'), dedication ('I am devoted to my sport'), enthusiasm ('I enjoy my sport') and vigour (I feel energized when I participate in my sport). AEQ indicates satisfactory Cronbach alpha coefficients of between 0.84 and 0.89 (Lonsdale et al., 2007).

4.2.3.4 Statistical Analysis

Data processing and statistical analysis was conducted using structural equation modelling (SEM) by using the statistical programme MPlus V8.1 (Asparouhov & Muthen, 2018) and SPSS. Latent variable modelling was analysed through SEM to confirm or dismiss the postulated model. SEM allows multiple relationships between observed and latent variables to be tested simultaneously. The measures, namely individual strengths use, team strengths use, athlete engagement, and gender, were inserted into a measurement model that was proposed by the researcher. As a result of SEM, it was confirmed that 'gender' as a mediator would not be effective for statistical purposes and a model of moderation was then processed in MPlus.

Data processing and statistical analysis was conducted using confirmatory factor analysis that included a second-order athlete engagement construct based on first-order components. The factor scores from this confirmatory factor analysis were then exported into a new data set that enabled an investigation into the potential moderating effect of gender. PROCESS in SPSS was used to test for moderation. Moderation analysis examined how individual and strength use had an impact on athlete engagement, where a third moderator variable (gender) influence was analysed (Hayes, 2013).

In order to analyse and evaluate the measurement within this study, Chi-square, root means square error of approximation (RMSEA), Comparative Fit index (CFI), the Tucker-Lewis index (TLI) and standardised root mean square residual (SRMR) were used.

RMSEA value of lower than 0.08 and SRMR of lower than 0.05 were considered as accepted and indicated a fit between the model. CFI and TLI values were higher than 0.95 and are thus considered acceptable (Savalei & Rhemtulla, 2012).

5. RESEARCH PROCEDURE

University (North-West University, Vaal Triangle Campus) approval to conduct the proposed study was requested, whereby the study was explained in detail to the Optentia research committee beforehand. Ethical approval for the proposed research was also requested after the research committee had approved the research.

As the study was conducted on a project that had an approved ethics number, ethical clearance was based on the assurance that the researcher had met minimum requirements to work with available data (such as having attended the relevant ethics training). Research data was handled with high levels of confidentiality and integrity. Secondary data was utilised, and no further fieldwork was required.

6. EXPECTED CONTRIBUTION

The results of this study will contribute to the literature of gender differences in athlete engagement in a South African context. Furthermore, the research will contribute to a better understanding of the relationship between gender and strength-based approach. Exploring whether gender has an influence on the relationship between SBA and athlete engagement, assists the Industrial and Organisational Psychology field in understanding factors that may influence the athlete environment.

This knowledge will assist coaches and sport leadership members in understanding how to possibly increase the levels of athlete engagement in order to obtain higher athlete performance. Further research would explore factors that coaches need to consider when working with sports teams of different genders in order to increase engagement and performance. Examining factors that contribute to creating an environment conducive to athlete engagement will provide the field of IOP with new research and understanding related to sport psychology.

7. ETHICAL CONSIDERATIONS

It is imperative when doing research that the Health Professions Act 56 of 1974 stipulated in the HPCSA (Health Professions Council of South Africa, 2015) guidelines be applied throughout the study. Ethical considerations are essential and began with a consent form to be completed by all participants which highlighted the research process. The researcher strictly adhered to the HPCSA regulations and will ensure beneficence and non-maleficence, equality, dignity and autonomy.

During the original data collection phase, the roles of participants were clearly indicated, where individuals were informed that they were under no obligation to participate in the study and were informed that they could opt out at any time they saw fit. All research findings will be transparent and completed with honesty. Anonymity and confidentiality are of the utmost importance and has been maintained.

The secondary data that was used for this study forms part of a research project that was formally approved by the Ethics Committee of North-West University – Vaal Triangle Campus, with ethics code (NWU-00108-14-S8). The project leader collected completed instruments and stored them in a secure storage facility. North-West University – Vaal Triangle provided ethical approval for this research (ethics code NWU-HS-2018-0089).

CHAPTER DIVISION

The chapters in the research will be presented as follows:

Chapter 1: Introduction

Chapter 2: Research article

Chapter 3: Conclusions, limitations and recommendations

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CHAPTER 2

RESEARCH ARTICLE

Team and individual strength use as predictors of athlete engagement: The moderation effect of gender

Abstract

The aim of this study was to investigate team- and individual strength use as predictors of athlete engagement. It furthermore examined the influence of gender on the relationship between team strength use and athlete engagement as well as the influence of gender on the relationship between individual strength use and athlete engagement. This study followed a quantitative, cross-sectional approach. A target sample population ($n = 235$) of student athletes was utilized to highlight the prevalence of relationships and associations at a given time. Confirmatory factor analysis included a second-order athlete engagement construct based on first-order components. PROCESS in SPSS evaluated moderation. Statistical analysis highlighted a low athlete engagement when team strength use is low, with females indicating a lower athlete engagement to their male counterparts when team strength use is low. These findings contribute to the knowledge of how athletes could optimise their performance through strengths development. Practical implications of the research and recommendations for future research are discussed.

Key terms: Strength-based approach, athlete engagement, job demands-resources model, conservation of resources theory, gender difference.

1. INTRODUCTION

A traditional focus on improving performance has been centred on pathology and individual weaknesses. However, the last few years have seen a shift towards positive psychology (Seligman & Csikszentmihalyi, 2000; Stander et al., 2017; Linley et al., 2006). The field of sport psychology has also benefited from this positive psychology movement in the form of strengths-based interventions (Gould, 2002). In line with the positive psychology movement, it was highlighted that engagement should focus on strengths (Diener, 2003) and not pathology in order to prevent burnout and increase performance (Hodge et al., 2009) – a research topic that has increased in popularity (Greene et al., 2013; Podlog et al., 2014; Schaufeli & Salanova, 2011; Timms & Brough, 2013). Engagement is characterized by vigour, dedication, enthusiasm, and confidence (Lonsdale et al., 2007; Schaufeli et al., 2002).

An increased interest in the study of engagement, a vital component of sport psychology (Lonsdale et al., 2007; Martins et al., 2015; Valbuena et al., 2016) has resulted in further research and investigation into athlete engagement (Lonsdale et al., 2007; Martins et al., 2015; Valbuena et al., 2016). Additional research in sport psychology has focused predominantly on athlete flow (Hodge et al., 2009), peak athletic performance (Colbert et al., 2012), resilience (Pidgeon et al., 2014), and motivation (Treasure, 2007). However, limited research has been conducted around the effect of team strength use and individual strength use (Stander et al., 2017) and more specifically, on gender differences, a demographic variable, within team- and individual strength use (Evdoxia et al., 2013; Stander et al., 2017).

The strength-based approach (SBA) stems from positive psychology and focuses on developing strengths, as opposed to focusing on deficits and weaknesses (Cravens et al., 2010; Linley & Harrington, 2006; Stander et al., 2017; Stander & Mostert, 2013). SBA identifies two dimensions, namely team strength use and individual strength use (Botha & Mostert, 2014; Stander & Mostert, 2013).

Team strength use refers to the team dynamics, the culture, and the policies that enable an individual's expression of their strengths (Stander & Mostert, 2013; van Woerkom et al., 2015). The willingness of a team to enable team member strengths through its daily functions is a characteristic of team strength use (Stander, 2017), which has been found to foster favourable outcomes such as productivity (Stander et al., 2013) and engagement (Botha & Mostert, 2014). Stander (2017) established that team strength use can be used as a developmental approach to wellbeing interventions, as well as for promoting team embeddedness which supports Stenseng et al.'s (2014) research which highlighted a need for a positive culture to enhance team relationships.

Individual strength use supports the need for athlete interventions that are designed around the utilization of character strengths in order to capitalize on optimal performance (Stander, 2017). Having the ability to achieve optimum performance and build resilience through effective use of strengths is the result of individual strength use (Frese & Fay, 2001; Stander et al., 2014). Research suggests that individual strength use is a strong predictor of athlete engagement (Stander et al., 2017), with males experiencing higher vigour and confidence than do their female counterparts (Martins et al., 2015; Meyer & Bourgeois, 1999).

2. STRENGTH-BASED APPROACH

Investigation and research into sport psychology and elite athletes has increased over the past few decades (Ludlam et al., 2015), in which strength-based approaches have been highlighted as an effective intervention for gaining positive outcomes (Goodwin, 2008; Gordon & Gucciardi, 2011; Linley et al., 2010). In order to attain positive outcomes, the strength-based approach should be used with individuals to enable them to apply their character strengths (Seligman & Csikszentmihalyi, 2000; Wood et al., 2011). Individual and team strength use are components of the strength-based approach (Botha & Mostert, 2014; Stander & Mostert, 2013) that aids in increased energy and goal attainment needed for achieving optimal performance and overcoming challenging tasks (Wood et al., 2011).

Strengths-based approach includes individual strengths use as well as team strengths use to focus on optimal performance (Botha & Mostert, 2014; Stander & Mostert, 2013). Within sport psychology, team strength use refers to the environment that a team creates to utilize strengths (van Woerkom et al., 2015). The environment refers to the culture, policies, and team dynamics present within a team that could enhance or reduce an individual's willingness and ability to fully express their strengths (Standar & Mostert, 2013). Individual strength use relates to utilizing strengths and building resilience in achieving optimal performance (Frese & Fay, 2001; Standar, Mostert, & de Beer, 2014).

Individual strength use has been explored in a study conducted by Gordon and Gucciardi (2011), which focused on cricketers enhancing their mental toughness through appreciative inquiry (Cooperrider, Whitney, & Stavros, 2008) and exploring their individual strengths within the team. Research also investigated an individual's resilience (Frese & Fay, 2001; Hobfoll et al., 2003) and competitiveness (Gould et al., 2002), which was developed by applying a strengths-based approach. A challenge that follows the strength-based approach is that interventions are based on utilizing strengths that are identified, rather than developing strengths (Beaumont et al., 2015; Standar et al., 2017). Sport confidence is developed when athletes are aware of their strengths and are acquainted to methods for strengthening their strengths (Beaumont et al., 2015; Standar et al., 2017).

In line with the job demands resource (JD-R) model, individual strength use is described as a resource (Standar & Mostert, 2013) as it is a property that increases the possibility of a goal being reached (Demerouti & Bakker, 2011). The same is true for team strength use which refers to the environment a team or organisation creates that enables an individuals' strengths (van Woerkom et al., 2015). The JD-R framework stipulates that resources assist in the accomplishment of team goals (Demerouti & Bakker, 2011) and greater group cohesion (Pummel et al., 2008). Negative outcomes are as a result of job demands which could lead to burnout or anxiety (Jones et al., 2013) and is seen as a factor that results in development being stunted (Xanthopoulou et al., 2009).

The JD-R model is a theoretical model which postulates that every work role has resources and stressors that contribute towards work-related stress, as well as positive outcomes (Bakker & Demerouti, 2007; Bakker et al., 2003b). In an environment that is deemed challenging, an individual will seek, protect or further develop their current resources and strengths (Alvaro et al., 2010; Halbesleben et al., 2014). The COR theory explains how this active seeking of resources contributes to an athlete's ability to accomplish goals (Moreno et al., 2010) or express their strengths within sports teams (Stander, 2017). Should an athlete not be able to express his/her strengths within an environment, they may not further develop or gain additional resources that will increase the chances of an athlete enduring challenges (Barker et al., 2013).

An environment a team creates should enable an athlete's character strength to be used as a valuable resource in ensuring optimal performance (Seligman & Csikszentmihalyi, 2000; Stander et al., 2011). Physical, social and organisational resources further assist in alleviating psychological or physiological strain that may prevent goal attainment or growth (Xanthopoulou et al., 2009). These individual and team resources within an athletic environment have been found to increase positive emotions that lead to an engaged state (Frederickson, 2002), increased team cohesion (Pummel et al., 2008) and increased goal attainment (Bakker & Demerouti, 2008; Demerouti & Bakker, 2011). While there is evidence that suggests individual strength use yields more positive outcomes to that of team strength use (Stander & Mostert, 2013; Stander et al., 2014), this research didn't investigate demographical variables such as gender differences in strength use. It is notable that sport psychology research has rarely considered gender differences, a demographic variable, within team- and individual strength use (Evdoxia, Miltiadis, & Evgenia, 2013; Stander et al., 2017).

3. ATHLETE ENGAGEMENT

Engagement, a psychological construct, describes the energy exhibited between a person and an activity (Russel et al., 2005), which has sparked interest in various research settings (Hodge et al., 2009; Martin, 2008; Leiter & Maslach, 2003). There are three components of engagement, namely behavioural (e.g. Participation), emotional (e.g. Belonging), and cognitive (e.g. Learning goals) (Appleton et al., 2006; Fredricks et al., 2004; Martins et al., 2014).

The sporting industry has found great value in research investigating methods for enhancing engagement (Hodge, 2009; Lonsdale et al., 2007a; Lonsdale et al., 2007b; Stander et al., 2017), specifically when applying engagement principles to increase performance (Golby & Sheard, 2004; Liem & Martin, 2012; Russell et al., 2005) and prevent athlete burnout (Hodge et al., 2009; Lonsdale et al., 2007a, Lonsdale et al., 2007b; Schaufeli et al., 2002). In researching sport and engagement, athlete engagement was refined to explain a stable sport experience that enables positive cognitions, emotions, and sensations to be experienced (Lonsdale et al., 2007a; Lonsdale et al., 2007b).

Athlete engagement within the sport context may be defined as a positive cognitive-affective experience (Lonsdale et al., 2007a). According to athlete engagement theory there are four elements of engagement: confidence, dedication, vigour and enthusiasm (Lonsdale et al., 2007a). *Confidence* refers to an athlete's belief in their ability to achieve their goals and experience high performance (Lonsdale et al., 2007a). The will to invest effort and time into achieving goals is the *dedication* aspect of athlete engagement (Lonsdale et al., 2007b). Investing time and effort occurs as a result of the pride the individual holds within their job. Further, individuals that display dedication can be seen to be inspired by their job (Schaufeli et al., 2002). *Vigour* can be seen in an individual who performs with emotional strength, physical power, and cognitive liveliness (Lonsdale et al., 2007b; Schaufeli et al., 2002).

The *enthusiasm* component of engagement is found where an individual experiences high levels of enjoyment (Lonsdale et al., 2007b). Total athlete engagement results in outcomes such as higher flow or persistence (Hodge et al., 2009), self-regulation (Martin & Malone, 2013), and decreased burnout (DeFreese & Smith, 2013).

Research focusing on athlete engagement has highlighted the need for understanding how gender differences could better predict the experience of athlete engagement (Deaner et al., 2015) and the utilization of strengths use (Martins et al., 2014; Stander et al., 2017). This is further highlighted by the limited research investigating the role of athlete engagement and how it is utilized within a sport environment (Stander et al., 2017). Martins et al. (2014) emphasized the need to conduct research with an inductive approach whereby athlete engagement is measured by means of self-reports.

The researcher followed this approach for purposes of this research, in line with the trend of assessment tools that have been developed to focus on an athlete perceived experience and what it means within the context of sport (Appleton, et al., 2006; Lonsdale et al., 2007a; Lonsdale et al., 2007b; Martins et al., 2014). The Athlete Engagement Questionnaire is an example of this approach, which was used in a study on New Zealand elite athletes when engagement was measured in a competitive sporting environment (Lonsdale et al., 2007).

4. GENDER

Gender in sport is a controversial topic since gender equality and diversity are often questioned (Gill & Kamphoff, 2010; Hyde, 2005; Malina et al., 2004). This has led to an increase in sport psychology research, with a specific focus on achievement or performance (Arnold, Fletcher, & Daniels, 2015; Harrison, Lee, & Belcher, 1999; Vilhjalmsson & Kristjansdottir, 2003).

Gender may be defined as the socially-constructed roles or characteristics of and relationships between men and women (World Health Organisation, 2018) and often includes biological sex, gender identity and social roles (Hyde, 2005). Gender differences in sport psychology have researched areas such as physical self-worth, athletic engagement and goal orientation (Evdoxia et al., 2013), leadership preferences (Wilson, 2013), and competitiveness (Beam et al., 2013), and further research by Arnold et al. (2015) determined gender differences in the way athletes experience organisational stressors.

Evdoxia et al. (2013) found that self-worth was higher in female athletes participating in individual sports than that of team sports, which contradicts a study conducted by Slutzky and Simpkins (2009) which focused on female adolescents and their increased self-esteem when participating in team sports. However, Evdoxia et al. (2013) focused on elite athletes who trained competitively and the differences between female and male athletes' self-worth, where it was found that females have lower physical self-worth than males. Further studies relating to a valuable resource, coping mechanisms, found that women who are in situations that require achievement tend to utilize their coping mechanisms more than males (Anshel et al., 2009; Crocker & Graham, 1995; Kaiseler et al., 2012; Kaiseler et al., 2013; Rogowska & Kusnierz, 2012; Tamres et al., 2012). These differences highlight that males and females could utilize different resources in different environments in order to perform within their athletic role.

Recent research conducted by Martins et al. (2015) explored gender differences between athlete engagement without any focus on the strengths-based approach or theoretical constructs. The research found no difference between male and female on the constructs *dedication* and *enthusiasm*. However, a difference occurred on the first-order constructs of confidence (Mean = 3.90 for males, and 3.77 for females) and vigour (Mean = 4.58 for males, and 4.69 for females) (Martins et al., 2015). Overall, no difference was found between genders on engagement when first-order constructs were not evaluated.

While this indicates that athlete engagement has previously been investigated in terms of gender, it leaves many questions relating to how interventions and methods designed to focus on specific genders may influence the level of engagement experienced by athletes.

While research on gender differences in sport psychology is limited, research focusing on a specific gender within a specific context in sport psychology is increasing. For example, research has focused on psychophysiological characteristics of female basketball players (Kozina et al., 2016), mindfulness-acceptance-commitment approach and psychological skills training for the mental health and sport performance of female student athletes (Gross et al., 2018), disordered eating in male athletes (Chapman & Woodman, 2016) and a lifespan perspective on the dual career of elite male athletes. The research highlighted here investigated valuable resources relating to athletes. The increase in gender specific research highlights a need to understand the gender differences that could be present when ensuring that an athlete is fully engaged within their sport in order to perform optimally.

5. JOB DEMANDS-RESOURCE MODEL (JD-R Model)

The Job Demands – Resource (JD-R) model emphasizes that risk factors associated with job-related stress are unique to different occupations (Bakker & Demerouti, 2007; Bakker et al., 2003a; Bakker et al., 2003; Demerouti et al., 2001). These factors are referred to as job demands and job resources which form a model that can be applied to various occupational settings. Job demands refers to physical, psychological, social, or organisational components of a job that require cognitive and emotional skills associated with physiological or psychological costs (Bakker & Demerouti, 2007; Bakker et al., 2003a; Bakker et al., 2003b; Demerouti et al., 2001). Job resources refers to physical, psychological, social, or organisational components of a job that reduce job demands, assist in goal attainment, and stimulate growth, learning and development (Bakker & Demerouti, 2007; Bakker et al., 2003a; Bakker et al., 2003b; Demerouti et al., 2001).

The JD-R Model can be used in the creation of positive environments that ensure positive outcomes (Bakker & Demerouti, 2007; Bakker et al., 2003). Job demands may contribute to negative outcomes as a result of burnout or anxiety (Mahoney et al., 2014) whereas job resources ensures reduced demands (Xanthopoulou et al., 2009).

Applying a strengths-based approach is considered to be correlated to positive leadership which has a positive relationship to engagement and involvement (Arakawa & Greenberg, 2007). Active strength promotion and the creation of a strength-use culture within a team by leaders can lead to higher performance (Elbe et al., 2010), indicating that a coach who possesses positive leadership skills may be a resource-related variable which contributes to flow and engagement. Moreover, indications are that a culture of strengths use may lead to increased performance and athlete engagement (Stander, 2013).

Strength use may be considered a personal resource as it reduces high emotional demands and increases self-esteem (Cohen & Wills, 1985). Strengths use support may be encouraged by allowing task engagement that is aligned with individual strength, which could involve two or more colleagues with similar strengths (van Woerkom & Meyers, 2015) to enhance team effectiveness.

Studies reported on by Bruner, Munroe-Chandler, and Sprink (2008) indicate how overly negative feedback can reduce confidence levels in elite athletes (a demand) but that strength-based development (a resource) resulted in increased engagement among sports coaches (Stander & Mostert, 2013). Further studies that have related to increased positive outcomes as a result of the JD-R Model in a sporting environment includes increased support of teammates in horse riders (Pummel et al., 2008), and a reduction in transition challenges experienced by rugby league players (Jones et al., 2013). In addition to this, research investigating the utilization of mindfulness training (Aherne, Moran, & Lonsdale, 2011) and hypnosis (Lindsay et al., 2005) as resources in athletes revealed positive results, such as increased flow (Stander, 2017).

However, determining gender differences in athletes when understanding the strength-based approach is lacking research (Chalabaev et al., 2014).

6. CONSERVATION OF RESOURCES MODEL

Conservation of resource (COR) model indicates that individuals tend to gather or maintain resources such as work support, work autonomy and work-related development processes (Hobfoll, 1989; 2001). Hobfoll (2001) emphasized that resource drain could be reduced by having more resources available that enable problem solving. The COR model indicates a positive relationship between resources of social support and individual confidence which contributes to personal characteristic resources (Baral & Bhargava, 2011). When individuals are challenged by a demanding environment, they will continuously seek resources that will allow them to perform at an optimal level or experience athlete flow (Alvaro et al., 2010).

Hobfoll (1989) identified four categories from which resource gain could result, namely objects, which includes items that are physical and fulfil our basic needs or provide societal status (e.g. Housing), conditions, which refers to status or provide access to additional resources (e.g. Employment), personal characteristics such as skills or personality traits that could increase self-efficacy, and energies such as money or knowledge that can be used to acquire additional resources (Wendling et al., 2017).

The COR theory assists in predicting moderating effects such as gender differences that may attribute to personal characteristics (Hobfoll, 1989, 2002). Stressors are perceived differently in conformity with personal characteristics (Hobfoll, 1989; Hobfoll & Shirom, 2001), resulting in resources to be utilised differently in order to reduce stress, such as coping mechanisms (Halbesleben et al., 2014).

Ford and Gordon (1999) indicate that COR has been used to assist athletes in better recovering from sports injuries, where lowered performance and burnout (Alarcon, Edwards, & Menke, 2011) can be prevented by personal traits.

In line with the COR theory, athletes may seek resources from their team should they seek to protect their current resources, for example, teammate relationship, if it is highlighted as a team strength (Halbesleben et al., 2014). A study conducted by Hobfoll and Stokes (1988) confirmed a social resource whereby perceived social support was instrumental in obtaining resources and maintaining one's identity (Hobfoll et al., 1990). Furthermore, this resource was especially important to female athletes (Giacobbi et al., 2004). It is therefore possible that females are more reliant on team strengths than are males. This knowledge would assist coaches in understanding how to improve athlete engagement through effective team strength use in female athlete teams.

The following hypotheses are set for this study:

Hypothesis 1: Strength use increases athlete engagement.

Hypothesis 2: Team strength use influences athlete engagement.

Hypothesis 3: Individual strength use influences athlete engagement.

Hypothesis 4: Gender has a moderating effect on the relationship between team strength use and athlete engagement.

Hypothesis 5: Gender has a moderating effect on the relationship between individual strength use and athlete engagement.

7. METHOD

7.1 Research Design

7.1.1 Phase 1: Literature review

A literature review was utilized to focus on analysing prior research pertaining to team- and individual strength use, athlete engagement and gender difference in athletes. The Job Demands-Resource Model and Conservation of Resources Model were used as the theoretical models. The literature reviewed sources dated between 2008 and 2018.

7.1.2 Phase 2: Secondary Data

The research included secondary data analysis where the pre-existing data originated from an internal research project within North-West University.

The original data was collected with the purpose of evaluating the role that the strength-based approach has on creating athlete flow experience, as well as to explore how the relationship between SBA and flow affected athlete engagement. The secondary data phase will highlight the research design, the participants, the measuring battery, the statistical analysis and the ethical considerations of the study. Secondary data will not be supplemented by further fieldwork. For purposes of this study, the quantitative data collected will be analysed in order to explore team- and individual strength use as predictors of athlete engagement.

7.1.3 Participants

Participants included South African student athletes who were completing their academic studies at the time of data gathering. A sample of $n = 235$ was analysed. Highlighted in Table 1, participants were predominantly from the race category of white and black, with a majority of participants being males. Participants were mostly involved in university football at the time of data collection.

Table 1

Participant Characteristics (n=235)

<i>Item</i>	<i>Category</i>	<i>Frequency</i>	<i>Percentage</i>
<i>Race</i>	Black	101	43%
	White	115	49%
	Coloured	19	8%
<i>Gender</i>	Male	173	73.6%
	Female	62	26.4%
<i>Sport</i>	Rugby	68	28.9%
	Football	167	71.1%
<i>Level of participation</i>	National	21	8.9%
	Provincial	46	19.6%
	University	163	69.4%
	Unknown	5	2.1%

The sample was limited to individuals who received a form of compensation for their participations in sport (for example through a bursary, small salary or allowance) and who were actively involved in sport participation and another time-consuming activity (for example work or study) simultaneously.

The sample was not limited to gender, income levels, ages or racial groups. These criteria ensured that only serious student athletes, who all had the prospect of developing into full-time athletes in the future.

7.1.4 Measuring instruments

Biographical questionnaire

A biographical questionnaire was used to gather information on the demographic characteristics of participants (Example; age, gender, home language, year of birth).

Strength Use and Deficit Improvement Questionnaire (SUDIQ)

The SUDIQ (van Woerkom et al., 2016) was used to measure dimensions of the strength-based approach through both team strength use and individual strength use. The SUDIQ comprises 43 items, which were scored on a seven-point frequency scale that ranges from 0 (almost never) to 6 (almost always). An example of items used included: ‘This organisation allows me to use my talents’ (strength use) and ‘this organisation requires me to work on my shortcomings’ (deficit improvement). Cronbach alpha coefficients of 0.96 for strength use and 0.92 for deficit improvement were identified for SUDIQ, indicating satisfactory reliability (Stander & Mostert, 2013).

Athlete Engagement Questionnaire (AEQ)

The AEQ, developed by Lonsdale, Hodge, and Jackson (2007) consists of 16 items that are rated on a five-point Likert scale ranging from 1 (almost never) to 5 (almost always).

The items are based on four subscales, namely confidence ('I feel capable of success in my sport'), dedication ('I am devoted to my sport'), enthusiasm ('I enjoy my sport') and vigour (I feel energized when I participate in my sport). AEQ indicates satisfactory Cronbach alpha coefficients of between 0.84 and 0.89 (Lonsdale et al., 2007), with Cronbach's alpha values between 0.71 and 0.94 in a South African-based study (Stander et al., 2017).

8. RESEARCH PROCEDURE

Permission was granted to access and use a data set that was collected for the purpose of investigating athlete flow and athlete engagement by Prof FW Stander. Upon approval, the data set was reviewed by Prof L de Beer in order to determine the validity of the proposed model.

The University (North-West University, Vaal Triangle Campus) approval to conduct the proposed study was requested and obtained by the Optentia research committee. Ethical approval for the proposed research was also requested and approved. As the study was conducted on a project that has an approved ethics number, ethical clearance was based on the assurance that the researcher had met the minimum training requirements to work with the available data.

8.1 Statistical Analysis

Data processing and statistical analysis was conducted using structural equation modelling by using the statistical programme MPlus V8.1 (Asparouhov & Muthen, 2018) and SPSS. Data processing and statistical analysis was conducted using confirmatory factor analysis that included a second-order athlete engagement construct based on first-order components.

Descriptive statistics as well as correlation analysis was used to quantify the associations between individual strength use, team strength use as well as the factors of athlete engagement (*vigour, confidence, dedication, and enthusiasm*).

Figure 1 has been established according to the research obtained. This model specifies that gender is a moderator between team strength use and athlete engagement.

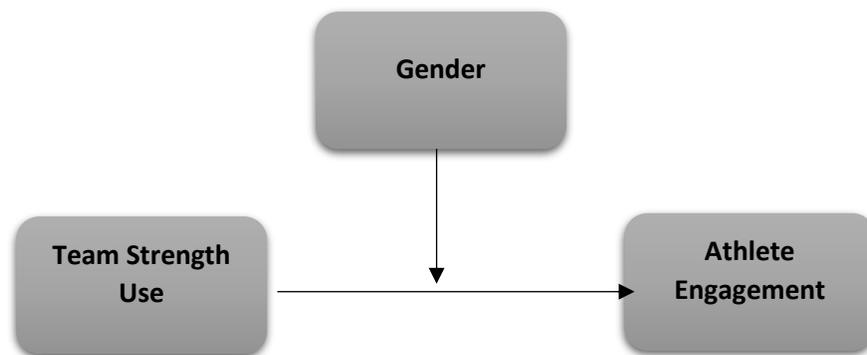


Figure 1:

Moderating effect of gender on athlete engagement

The scores of the factors from this confirmatory factor analysis were then captured onto a new data set that enabled an investigation into the potential moderating effect of gender. Comparative Fit Index and Tucker-Lewis Index (CFI and TLI ≥ 0.95), together with Standardised root mean square (SRMR ≥ 0.05) and Root mean square error of approximation (RMSEA ≤ 0.08) was used for standard fit indices. PROCESS in SPSS (IBM Corp, 2013) was used to test for moderation. Moderation analysis examined how team strength use and individual strength use had an impact on athlete engagement, where a third moderator variable (gender) influence was analysed (Hayes, 2013).

RESULTS

The results section highlights the process of analysis in determining the relationship between gender and individual strength use, gender and team strength use, and gender and athlete engagement. A correlational approach was utilised to examine the variables and determine the relatedness between each variable (*team strength use, individual strength use, confidence, dedication, vigour, enthusiasm, and athlete engagement*).

Correlation Matrix

A correlation matrix was used to analyse the correlation between the variables highlighted in the study, such as team strength use, individual strength use, the sub-dimensions of strength use (*confidence, dedication, vigour, enthusiasm*) and athlete engagement. The model that will be discussed includes a second-order athlete engagement construct based on the first-order component latent variables.

Table: 1

Correlation Matrix

	<i>Team Strength Use</i>	<i>Individual Strength Use</i>	<i>Confidence</i>	<i>Dedication</i>	<i>Vigour</i>	<i>Enthusiasm</i>	<i>Athlete Engagement</i>
<i>Team Strength Use</i>	1.00						
<i>Individual Strength Use</i>	0.67	1.00					
<i>Confidence</i>	0.46	0.64	1.00				
<i>Dedication</i>	0.47	0.66	0.80	1.00			
<i>Vigour</i>	0.47	0.65	0.79	0.81	1.00		
<i>Enthusiasm</i>	0.45	0.62	0.75	0.77	0.76	1.00	
<i>Athlete Engagement</i>	0.52	0.73	0.88	0.91	0.90	0.85	1.00

* $P < 0.01$

**Large practical effect ($r=67$)

***Medium practical effect ($r \geq 30$)

Team strength use, and individual strength use, are correlated with large practical effect ($r=0.67$). The correlation matrix confirms that a positive relationship of medium effect exists between team- and individual strength use and athlete engagement. The cut-off values for practical significance are as follows: small effect ($r < 0.30$), medium effect ($r > 0.30$), or large effect ($r > 0.50$; Cohen, 1988). Correlations of medium effect ($r \geq 0.30$) (Cohen, 1988) were found between team strength use and confidence ($r=0.46$), team strength use and dedication ($r=0.47$), team strength use and vigour ($r=0.47$), and team strength use and enthusiasm ($r=0.45$). Correlations of large effect ($r \geq 0.50$) (Cohen, 1988) were found between team strength use and individual strength use, individual strength use and confidence, individual strength use and dedication, individual strength use and vigour, individual strength use and enthusiasm, and individual strength use and athlete engagement. Correlations of large effect ($r \geq 0.50$) (Cohen, 1988) were also found between confidence and dedication, confidence and vigour, and confidence and enthusiasm. Vigour and dedication and enthusiasm and dedication also indicate correlations of large effect ($r \geq 0.50$) (Cohen, 1988).

7.1.1 Descriptive Statistics

The descriptive statistics and reliabilities for team strength use with gender differences, individual strength use with gender differences, and athlete engagement with gender differences are reported in tables 2, 3, and 4 below.

Table 2

Descriptive statistics for Team Strength Use, with gender differences

<i>Team Strength Use Items</i>	<i>Mean</i>	<i>Sample Variance</i>
<i>My sport team uses my strengths</i>	4.48 (Female 4.77; Male 4.38)	1.83 (Female 1.67; Male 1.88)
<i>My sport team allows me to play in a manner that best suits my strong points</i>	4.59 (Female 5.16; Male 4.39)	1.86 (Female 1.35; Male 2.04)
<i>My sport team gives me the opportunity to do what I am good at</i>	4.51 (Female 5.16; Male 4.28)	2.24 (Female 1.68; Male 2.44)
<i>My sport team allows me to use my talents</i>	4.73 (Female 5.37; Male 4.50)	2.19 (Female 1.70; Male 2.37)

Evidence suggests that a majority of the participants experienced high levels of team strength use during the time of data collection. These included participants having a sport team that allows talent use and playing in a manner that best suits participants' strong points, being deemed as a valuable contributor to team strength use. When comparing the mean scores in Table 3 below with Table 2 above, indications are that participants experienced higher individual strength use than team strength use. This could indicate a need for further research to enable an understanding of how to increase team-strength use within an athlete's environment and whether or not this would have a positive influence on athlete engagement.

Participants scored highly for each item within team strength use, with 'My sport team allows me to use my talents' scoring the highest (Mean = 4.73). Females scored the highest on the item 'My sport team uses my strengths' where males scored highest with the item 'My sport team allows me to use my talents'.

The item 'My sport team gives me the opportunity to do what I am good at' indicates the highest variance, specifically for males, where females indicated that highest variance for 'My sport team allows me to use my talent'. This indicates that both male and female viewed their teams as supportive in allowing them to use their individual strengths, with males showed a higher variance when believing that their sport team provides them with an opportunity to do what they are good at.

Table 3

Descriptive statistics for Individual Strength Use, with gender differences

<i>Individual Strength Use Items</i>	<i>Mean</i>	<i>Sample Variance</i>
<i>In my sport, I try to apply my talents as much as possible</i>	5.17 (Female 5.48; Male 5.05)	1.20 (Female 0.63; Male 1.40)
<i>In my sport, I focus on the things I do well</i>	5.07 (Female 5.25; Male 5.01)	1.17 (Female 0.74; Male 1.33)
<i>In my sport, I make the most of my strong points</i>	5.12 (Female 5.48; Male 4.99)	1.18 (Female 0.86; Male 1.30)
<i>I capitalise on my strengths in my sport</i>	5.14 (Female 5.30; Male 5.08)	1.13 (Female 0.62; Male 1.31)

With Table 3 indicating high team strength use where talents and strengths can be utilised, it is possible that participants scoring higher on items ‘In my sport, I try to apply my talents as much as possible’ (Mean = 5.17) and ‘I capitalise on my strengths in my sport’ (Mean = 5.14) rates these specific items higher as a result of the team strength use evidence presented in Table 3.

Individual strength use items were also scored highly both by males and females, with females indicating a higher result for utilizing their talents as much as possible (Mean = 5.48) and males scoring higher on the item ‘I capitalise on my strengths in my sport’ (Mean = 5.08). This is an interesting contrast where females referred to strengths in team use but talent in individual use, and males refer to strengths in individual use but talent in team use. While this may not be a significant finding, it would be interesting to understand whether or not ‘talent’ and ‘strength’ within sport is defined or understood differently between males and females.

Table 4

Descriptive statistics for Athlete Engagement, with gender differences

<i>Athlete Engagement Dimensions</i>	<i>Mean</i>	<i>Sample Variance</i>
<i>Confidence</i>	4.29 (Female 4.42 ;Male 4.24)	0.62 (Female 0.56;Male 0.68)
<i>Dedication</i>	4.32 (Female 4.50;Male 4.26)	0.72 (Female 0.53;Male 0.81)
<i>Vigour</i>	4.42 (Female 4.54;Male 4.38)	0.51 (Female 0.42;Male 0.55)
<i>Enthusiasm</i>	4.57 (Female 4.73;Male 4.51)	0.37 (Female 0.43;Male 0.54)

Overall, participants rated highly on enthusiasm (Mean = 4.57), a dimension of athlete engagement. Males and females indicated higher ratings on the dimension of enthusiasm, with females (Mean = 4.73) rating higher than males (Mean = 4.51).

Variance levels between males and females were higher on the dimension of confidence (Male variance = 0.68) and Dedication (Male variance = 0.81). The findings from this study are contradictory to those of Martins et al. (2015) and Meyer and Bourgeois (1999) who indicated that males experienced higher vigour and confidence than do their female counterparts.

8.1.2 Model fit and correlations

Confirmatory factor analysis was measured according to a measurement model that comprised a second-order athlete engagement construct, which was based on the first-order component latent variables. This was measured whereby the four dimensions of athlete engagement were loaded onto athlete engagement as a latent variable to measure possible mediation. Once the possibility of mediation was rejected, the factors scores from the CFA were exported into a new data set to investigate the possible moderating effect of gender.

Testing a non-second order factor model would be superfluous as the correlations between the individual sub components of Athlete Engagement indicate concerning discriminant validity (correlations of 0.85 or above) (Brown, 2015). These first-order component latent variables include confidence, dedication, vigour, and enthusiasm. Estimated factor loadings were above the cut-off of 0.50. As highlighted in Table 5, results of the CFA revealed that the measurement model was an adequate fit to the data (CFI = 0.96; TLI=0.96; RMSEA=0.07; SRMR=0.07). Statistically significant relationships were established between confidence, dedication, vigour, and enthusiasm with gender being a moderating factor. .

Table: 5
Fit statistics for hypothesized model

<i>Model</i>	χ^2	<i>df</i>	<i>TLI</i>	<i>CFI</i>	<i>RMSEA</i>
1	534.21	246	0.96	0.96	0.07

χ^2 , chi-square statistic; *df*, degrees of freedom; TLI, Tucker-Lewis Index; CFI, Comparative Fit Index; RMSEA, root mean square error of approximation.

Regression analyses

Regression analysis was analysed to account for the total variation of whereby regression lines were ability to account for total variation in the dependant variable, athlete engagement. the model summary below highlights a statistically significant path between strength use and athlete engagement, however, gender was not a significant predictor of athlete engagement when acting as a moderator between team strength use and athlete engagement in males.

Table: 7

Model Summary

<i>Model</i>	<i>R</i>	<i>R Square</i>	<i>R Square Change</i>	<i>F</i>	<i>df1</i>	<i>df2</i>	<i>P</i>
1	.565	.319	0.008	35.421	3.000	227.000	.000

Moderation analyses

PROCESS in SPSS (IBM Corp, 2013) was used to test for moderation. Moderation analysis examined how team strength use and individual strength use had an impact on athlete engagement, where a third moderator variable (gender) influence was analysed (Hayes, 2013). In terms of athlete engagement, indications are that both male and female athletes rely on high team strengths use to increase their level of engagement. Evidence suggests that females may be more reliant on team strength use to than do their male counterparts.

The data analysis proved to have no significant result for gender in the relationship between individual strength use and athlete engagement. However, a *p* value of 0.1 was found for gender and the relationship between team strength use and athlete engagement, with females showing higher athlete engagement when found in a team with high sensiivity. While a *p* value of 0.5 is preferred (Fisher, 1950; McGuinness, 2015), for the purpose of moderation a *p* value of 0.1 is acceptable and considered significant (Fisher, 1950; Greenland et al., 2016; McGuinness, 2015).

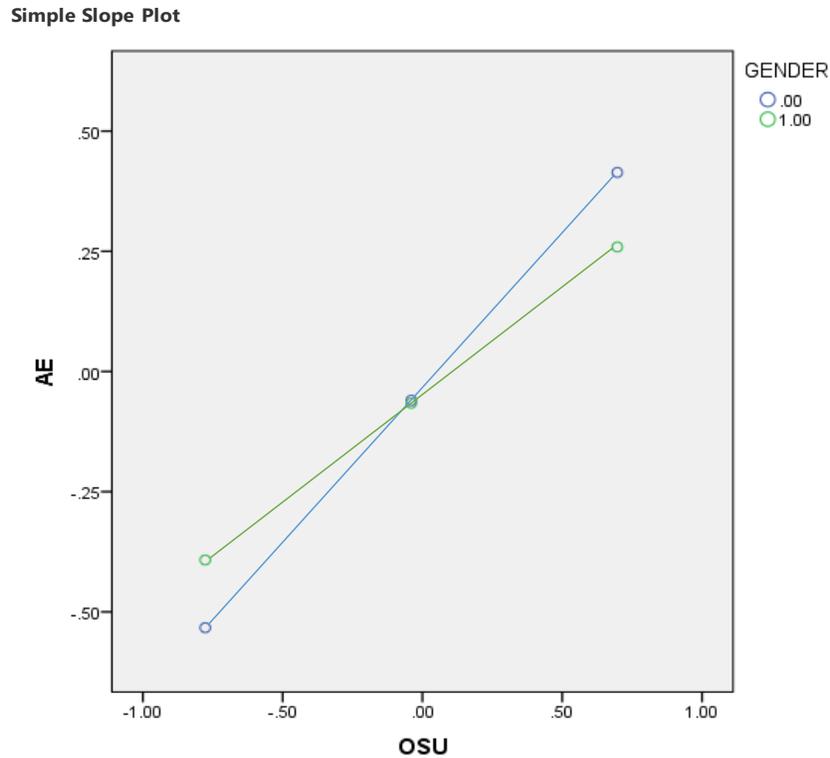


Figure 1:

Gender as moderator for the relationship between team strength use and athlete engagement

As per Figure 1, it is clear that high athlete engagement results in high team strengths use. For female athletes, this is more so than for male athletes. Thus, higher athlete engagement is experienced by females when team strength use is high. Furthermore, females experience lower levels of athlete engagement than do male athletes when team strength use is low. Analysis proved no significant relationship between individual strength use and athlete engagement, however, it is clear as regression and moderation analysis that individual strength use does have a positive influence on athlete engagement.

8. DISCUSSION

The aim of this study was to investigate whether team- and individual strength use have an influence on athlete engagement, while investigating whether gender would have a impact on the relationship between strength use and athlete engagement. The current study did not focus on the consequences or antecedents of athlete engagement, but inferences are made that highlight the benefits of athlete engagement.

There is a medium effect ($r \geq 30$) between team- and individual strength use and athlete engagement. Team strength use, and individual strength use are correlated with large practical effect ($r \geq 50$) However, this finding does not confirm *Hypothesis 1*; strength use increases athlete engagement due to there being a lower representation of individual strength use and athlete engagement. A statistically significant correlation of large effect ($r \geq 50$) (Cohen, 1988) was found to exist between team strength use and athlete engagement. Thus, confirming *Hypothesis 2*, Team strength use influences athlete engagement. In addition to this, correlations of large effect ($r \geq 50$) (Cohen, 1988) were found to exist between individual strength use and athlete engagement; therefore confirming *Hypothesis 3*.

Athletes can gain valuable job resources through strong team relations (Stander & Mostert, 2013) and effective sports coaches that are able to identify team gaps and apply positive psychology interventions to increase team strengths and focus on optimal performance (Botha & Mostert, 2014; Stander & Mostert, 2013; Pummel et al., 2008; Aherne et al., 2011). This research contributes to the theory of athlete engagement as well as differences in athlete characteristics relating to gender.

The contribution made could assist in further understanding the different ecological factors that contribute to athlete engagement and determining how resources can be drawn from team strength use to enable longer-term athlete engagement (Stander, 2015).

Longer-term athlete engagement could result in higher athlete performance as well as reduced burnout levels in Elite athletes. Elite athletes refer to athletes that participate in support at a professional, national or international level.

In evaluating whether gender is positively associated with the engagement of athletes, no direct statistically significant interactions were found. It was speculated that gender would have moderate effect on the relationship between team strength use and athlete engagement. While no indirect effects were found for mediation, statistical analysis proved gender to be a moderating variable between team strength use and athlete engagement. Gender as a moderating variable showed a slight statistical significance ($p \leq 0.1$) for females having a moderate effect on the relationship between team strength use and athlete engagement, thus rejecting hypothesis 4. In addition, there was no statistically significant data that identified interactions between gender and individual strength use and gender and engagement; thus rejecting hypothesis 5.

Indications are that no significant interaction effects existed between gender and athlete engagement, but that females may require higher team strength in order to increase athlete engagement. Research relating to self-worth in female athletes highlighted that males had higher self-worth than their female counterparts (Evdoxiate et al., 2013) – a finding similar to that of athlete engagement.

The study by Evdoxiate et al. (2013) included confidence as a factor of self-worth, a factor that is also included in athlete engagement, which is enhanced through team sporting activities (Pedersen & Seidman, 2004; Slutzky & Simpkins, 2009). This correlation could prove noteworthy for future studies where interventions around increasing team strength could be designed with a view to determine how team strength use can assist the sporting industry to optimise athlete engagement.

Female level of athlete engagement was moderately influenced by higher team strength use. This finding could be linked to research highlighting increased self-worth in team sporting activities (Pedersen & Seidman, 2004; Slutzky & Simpkins, 2009) as well as research that specified an increase in teammate support relating to positive outcomes (Pummel, Harwood, & Lavalley, 2008). The emphasis on team benefits provides insight into how the JD-R Model and COR theory serves as a valuable framework in increasing athlete engagement (Stander, 2015). In developing an environment and sports team culture that encourages teamwork support (Pummel et al., 2008) and autonomy to utilize own strengths, it is plausible that female athlete engagement would increase.

In understanding how females require a team-based approach more than their male counterparts, sports coaches have a deeper understanding of the importance of team dynamics in ensuring that female athletes are able to conserve or seek their resources within an environment that is conducive to them. With the poor results received on male athletes, the field of sport psychology has gained insight into the importance of not focusing solely on team strengths in order to increase athlete engagement in males.

9. Limitations of the Study and Recommendations for Future Research

This research was not without limitations and many recommendations for future research can be made. The data collection followed a cross sectional design, meaning that data was collected at a single point in time.

It is recommended that a longitudinal study be conducted whereby team dynamics are observed over a long period of time, where there are factors that can both positively and negatively influence the culture of the team, such as wins or losses.

Furthermore, the study did not focus on specific variables of gender but rather on a broad-spectrum assumption of gender. It would be interesting to study specific factors relating to gender, such as a psychological construct that has an influence on team strength use and athlete engagement. For example, social role influences. Being more specific on different gender characteristics and how they contribute to athlete engagement may also be valuable to the field of sport psychology. Specifically, understanding what team elements contribute to athlete engagement in females, as well as how these elements contribute to athlete engagement overall, for example, social support.

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CHAPTER 3

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

This chapter provides a final conclusion in conformity with the general and specific objectives of this study. Established research questions are used to inform the conclusions as well as recommendations formed during this study. Limitations of this study, together with future recommendations for further research are highlighted.

Conclusions

The purpose of this research was to investigate team- and individual strength use as predictors of athlete engagement, with a moderation effect of gender. A specific focus was centred on whether team- and individual strengths use influence athlete engagement.

The first and second specific objectives of the study were to determine how strength-based approach and athlete engagement was conceptualized in existing literature, and to determine the relationship between strength-based approach and athlete engagement. Research has provided a thorough conceptualization of strength-based approach and athlete engagement which has allowed an increase in the understanding of how athlete engagement may be predicted (Stander et al., 2017) and enhanced sport participation (Allender et al., 2006; Ullrich-French & Smith, 2009).

Athlete engagement stems from various studies that focused on understanding the energy that exists between a person and an action being performed (Hodge et al., 2009; Martin, 2008; Leiter & Maslach, 2003; Russel et al., 2005). Athlete engagement refers to a stable sport experience that enables positive cognitions, emotions, and sensations to be experienced (Lonsdale et al., 2007a; Lonsdale et al., 2007b). The research highlighted that enthusiasm and vigour contributed to the student athlete's overall level of engagement. In accordance with the JD-R Model, work roles contain resources that increase desired outcomes (Bakker & Demerouti, 2007). For purposes of this study, both enthusiasm and vigour could be considered valuable resources that contribute to optimal performance of the participants. In addition, COR theory highlights that the accumulation and retention of available resources is vital to people (Halbesleben, Neveu, Paustian-Underdahl, & Westman, 2014). The COR theory describes how individuals actively seek resources in their direct environment for goal attainment (Hobfoll, 1989). Further, the COR theory delineates the psychological stress experienced in a reaction to a lack of resource gain, or a loss of resources in a specific environment/context (Alvaro et al., 2010; Hobfoll, 1989, 2001; Tenenbaum & Eklund, 2007).

While research relating to factors that contribute to a favourable environment that enables athlete engagement is limited (Stander et al., 2017), an increase in studies relating to athlete engagement in elite athletes has increased. It is notable that much research pertaining to athlete engagement tends to focus on student or semi-professional athletes, not elite athletes that have had long-standing experience. In addition, a majority of the literature that is available is according to research conducted outside South Africa and in a European or North American context. There is an apparent emphasis on studies that relate to specific factors relating to individual and team strengths use. For example, goal orientation, physical perceptions or self-worth, need satisfaction, and motivation appear to be common individual strength use elements that are researched (Evdoxia et al., 2013; Podlog et al., 2015). whereas team strength use research in athlete teams often investigates climate (Gonzalez-Roma et al., 2010; Younes et al., 2013) and coach performance (Curran et al., 2015; Zarins & Savolainen, 2016).

Hypothesis 1: Strength use increases athlete engagement.

In this study, research findings revealed that there is a medium effect between team- and individual strength use and athlete engagement. Team strength use, and individual strength use are correlated with large practical effect ($r=0.67$). This finding does however not confirm *Hypothesis 1*; strength use increases athlete engagement as a result of there not being sufficient evidence to justify the relationship between strength use and athlete engagement within this study.

This finding is somewhat surprising as previous research found that the strength-based approach results in positive athlete engagement (Stander et al., 2017) as a result of the strength-based approach focusing on team strength use, the environment that a team creates to utilize individual strengths (van Woerkom et al., 2015) and individual strength use, which focuses on building strengths to achieve optimal performance (Frese & Fay, 2001; Stander, Mostert, & de Beer, 2014). Should team strength use be low, it would be feasible to assume that resources would not be readily available to athletes and could therefore increase stress as a result of higher demands and lower resources (Alvaro et al., 2010; Hobfoll, 1989, 2001; Tenenbaum & Eklund, 2007).

Hypothesis 2: Team strength use influences athlete engagement.

Overall, participants rated highly on enthusiasm (Mean = 4.57), a dimension of athlete engagement. Statistical analysis found a large practical significance between enthusiasm and athlete engagement (0.87). Vigour was also found to have a large practical significance to athlete engagement (0.88). The moderation graph indicates that when team strength use is low, participants would also experience lowered athlete engagement with males displaying slightly higher levels of athlete engagement than females in an environment with lowered team strength use. Research indicated a strong correlation between high team strength use and an increase in athlete engagement. While team strength use contributed to athlete engagement, individual strength use was found to be a stronger contributor. Thus, hypothesis 2 was confirmed within this study.

A study conducted by Stander and Mostert (2013) confirmed this finding by arguing that team strength served as a mediator between individual strength use and athlete engagement. This strong correlation contributes to sport psychology whereby an emphasis on future research should be focused on designing interventions or training practices that increase team strength use. Team strength use refers to policies, procedures or the culture that can be found within a sports team (Stander & Mostert, 2013). Correlations between team strength use and favourable outcomes have been proven positive in previous research (Stander et al., 2017).

These findings support the results of Stander et al. (2017) who argued that the development of team strength use would increase well-being in athletes. Team strength use has also been proven to provide an environment in which individuals can utilise their potential (Stander et al., 2017), which also proved favourable in this study whereby participants scored highly on items that referred to them being able to utilise their personal talents or strengths. In understanding how to manage athletes' engagement, coaches can gain an understanding of how to increase athletes' engagement in order to gain optimal results.

Hypothesis 3: Individual strength use influences athlete engagement.

Analysis indicates that both team- and individual strengths use has a positive influence on athlete engagement, this is supported by a study conducted by Stander and Mostert (2013) which also found individual strength use to be a strong predictor of athlete engagement with a mediator of team strength use. The JD-R model emphasises the importance of obtaining and having access to valuable resources that increase desired outcomes (Bakker & Demerouti, 2007). Hypothesis 3 was also confirmed as a result of individual strengths use having a positive influence on athlete engagement.

Talents and strengths within an athlete's role is deemed a valuable resource that participants rated highly. This is an indication that focusing on interventions and development strategies that assist individuals in identifying and utilising their individual strengths, more positive outcomes could be achieved. It is therefore plausible that the JD-R Model is an effective scientific framework that can be utilised as a tool to increase athlete engagement and positive outcomes.

Hypothesis 4: Gender has a moderating effect on the relationship between team strength use and athlete engagement.

Hypothesis 5: Gender has a moderating effect on the relationship between individual strength use and athlete engagement.

The purpose of both H4 and H5 was to investigate whether or not gender had an influence on the constructs of athlete engagement and team strength use and individual strength use and how this knowledge may be advantageous to the athlete arena. This stemmed from the various research that appears to focus solely on gender differences within a specific context of sport psychology, such as self-worth in male athletes (Evdoxia et al., 2013) and psychophysiological characteristics of female basketball players (Kozina et al., 2016). Both H4 and H5 were rejected as a result of the analysis indicating no moderating effects for gender between team strength use and athlete engagement or individual strength use and athlete engagement. However, statistical analysis proved gender to be a moderating variable between team strength use and athlete engagement. Gender as a moderating variable showed a slight statistical significance ($p \leq 0.1$) for females having a moderating effect on the relationship between team strength use and athlete engagement. This research assists coaches in understanding how male or female athletes may be encouraged to perform and to utilise the team strength approach or individual strength use approach to increase athlete engagement, by ensuring that their training programs are adapted to the moderating effects of gender.

A majority of the research that has been conducted on gender differences in sport psychology have found some variance, highlighting that differences in resource utilization between males and females could exist. This was highlighted during the current study where it was indicated that gender had a moderating influence on team strength use.

This is especially true for females who indicated lower athlete engagement when team strength use was lower, respectively, males indicated a lower influence on athlete engagement when team strength use is low. This finding assists coaches in understanding the importance of utilizing team strengths use when coaching an all-female team. This could be especially true when needing to influence team climate (Slutzky & Simpkins, 2009; Hodge et al., 2009) and enhance team relationships (Hodge et al., 2009).

Beam et al (2004) found significant differences between male and female competitiveness and win orientation. In addition, a study conducted by Arnold et al. (2015) found significant differences between male and female athletes in the way they experience organisational stressors. Furthermore, research suggests that adolescent females show a positive correlation between task orientation and physical self-worth (Biddle & Wang, 2003), contradictory to research conducted by Newton et al. (2004) who found no correlation between physical self-worth and task orientation but positive correlations with their male counterparts. This contradiction could indicate possible gender differences in the way in which athletes utilise their strengths to achieve optimal engagement.

Gender differences in sport psychology has been researched in relation to gender role beliefs and parents' support for athlete participation (Heinze et al., 2017), sports interest and motivation (Deaner et al., 2016), and physical self-worth and goal orientation (Evdoxia et al., 2013). Further research within the sports domain has indicated differences between men and women in the way they experience stress when competing in their respective sports (Hammermeister & Burton, 2004, Kaiseler et al., 2012, Kaiseler et al., 2013).

However, there is limited research on gender differences (a demographic variable) on team- and individual strength use (Stander et al., 2017) as well as athlete engagement (Evdoxia et al., 2013; Martins et al., 2015).

As evidence suggests, the JD-R Model as well as the COR model are influential in the context of sport psychology (Stander et al., 2017, Stander, 2015), specifically when referring to resources that can be utilized in order to gain favourable outcomes (Alvaro et al., 2010; Hobfoll, 1989, 2001; Tenenbaum & Eklund, 2007). The JD-R Model is especially valuable for female sports teams whereby additional research can be conducted to identify especially what team strengths can be utilized to encourage teamwork support and how this may activate females' ability to utilise their individual strengths in order to perform.

This research has indicated the importance of establishing strong team strength use development methods and interventions in order to ensure that female athletes experience higher athlete engagement. In order to achieve higher team strength use, it would be beneficial to further explore environmental factors of a sports team that would contribute to higher team strength use that female athletes deem a valuable resource in order to increase optimal performance and increased athlete engagement.

Limitations of this research

This research was not without limitations as the data was gathered with a limited sample group. The sample group consisted of student athletes that may not necessarily pursue a career as an athlete and therefore could have a skewed perception of team strengths and individual strengths.

Furthermore, the pressure to perform could be lower for student athletes, reducing the demands they could experience. In addition, when exploring gender, the study did not focus on specific variables of gender but rather on a broad-spectrum assumption of gender.

Future research could investigate the level of demands that student athletes face in order to determine the resources that would be required in order to strengthen individual and team strength use within the sports team. Investigating athlete engagement over time would be beneficial, especially if research could compare the duration of athlete engagement of student athletes and that of elite athletes in order to determine whether student sport holds the same or less pressure to elite athletes' sports expectations.

It would be interesting to study specific factors relating to gender, such as a psychological construct that has an influence on team strength use and athlete engagement. For example, social role influences. Being more specific on different gender characteristics and how they contribute to athlete engagement may also be valuable to the field of sport psychology – specifically, understanding what team elements contribute to athlete engagement in females, as well as how these elements contribute to athlete engagement overall, for example, social support.

This research focused solely on two sports categories, namely; soccer/football and rugby, predominantly male sports. It could be beneficial to conduct this study on various sport categories which attract different gender variances, such as netball. In addition, the research did not measure sports which may require a stronger focus on individual strengths use, such as running. These are limitations as the research may be biased towards team sports as a result of preferences to participate in team sports, not in individual sports.

Lastly, the research was conducted on student athletes who may not foresee a professional career in sports. It would be interesting to research elite athletes whose sole focus is on athlete performance and a longer-lasting career in professional sporting as this may create a higher need for individual team strength use. It would especially be interesting to investigate the level of burnout with elite athletes where gender roles and family responsibilities are a factor. This may result in a different perspective on team- and individual strength use as a resource for athlete engagement.

Recommendations for Future Research

It is recommended that a longitudinal study be conducted whereby team dynamics are observed over a long period of time, where there are factors that can both positively and negatively influence the culture of the team, such as wins or losses. A longitudinal study that monitors gender differences in managing and developing individual and team strength use may be valuable in terms of monitoring how athlete engagement can be better managed to reduce burnout. It is recommended that gender be researched more specifically to team strength use, such as gender role within an athlete environment that may contribute to enhanced athlete engagement. Future research could investigate gender differences in post-career depression and burnout of elite athletes in order to determine strategies that can be adopted by coaches as well as sporting clubs.

In addition, further research that highlights how gender differences may influence the level of burnout experienced by elite athletes could add a valuable contribution to an understanding of how to detect burnout in athletes early. This research would also be able to identify possible interventions that could be used by coaches for athletes that experience burnout in order to better determine how engagement can decrease the levels of burnout in specific genders.

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